

Claims

1. A recording apparatus, comprising:
a recording control unit configured to input
5 content data; to compress the content data; to extract a
portion of the content data, which portion of the content
data is to be used as an index entry, based on data type
information obtained during the compression of the
content data; and to record on a recording medium the
10 compressed content data, the portion of the content data,
and recording time information obtained during the
compression of the content data.

2. The recording apparatus as claimed in claim
15 1, wherein the compressed content data, the portion of
the content data, and the recording time information
obtained during the compression of the content data are
recorded in different areas of said recording medium.

- 20 3. The recording apparatus as claimed in claim
1 or 2, wherein the portion of the content data is
 appended to another said portion of the content data,
 which another said portion of the content data is
 recorded on said recording medium, as the compression of
 25 the content data progresses.

4. The recording apparatus as claimed in claim
1, 2, or 3, wherein the portion of the content data is
recorded on a different recording medium than said
5 recording medium.

5. The recording apparatus as claimed in claim
4, wherein the portion of the content data is recorded on
a different recording medium than said recording medium
10 during intervals between recording sessions of the
compressed content data.

6. A reproducing apparatus, comprising:
a reproducing unit configured to reproduce a
15 portion of content data, which portion of the content
data is recorded on a recording medium by the recording
apparatus as claimed in claim 1, 2, 3, 4, or 5; and to
reproduce the content data at fast speed, backward, or
backward at fast speed based on the reproduced portion of
20 the content data.

7. A recording method, comprising the steps of:
inputting content data;
compressing the content data;
25 extracting a portion of the content data, which

portion of the content data is to be used as an index entry, based on data type information obtained during the compression of the content data; and

5 recording on a recording medium the compressed content data, the portion of the content data, and recording time information obtained during the compression of the content data.

10 8. The recording method as claimed in claim 7, wherein the compressed content data, the portion of the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

15 9. The recording method as claimed in claim 7 or 8, wherein the portion of the content data is appended to another said portion of the content data, which another said portion of the content data is recorded on said recording medium, as the compression of the content data progresses.

20 25 10. The recording method as claimed in claim 7, 8, or 9, wherein the portion of the content data is recorded on a different recording medium than said recording medium.

11. The recording method as claimed in claim
10, wherein the portion of the content data is recorded
on a different recording medium than said recording
5 medium during intervals between recording sessions of the
compressed content data.

12. A reproducing method, comprising the steps
of:

10 reproducing a portion of content data, which
portion of the content data is recorded on a recording
medium by the recording method as claimed in claim 7, 8,
9, 10, or 11; and

15 reproducing the content data at fast speed,
backward, or backward at fast speed based on the
reproduced portion of the content data.

13. A computer-readable recording medium having
a program embodied therein for causing a computer to
20 input content data; to compress the content data; to
extract a portion of the content data, which portion of
the content data is to be used as an index entry, based
on data type information obtained during the compression
of the content data; and to record on a recording medium
25 the compressed content data, the portion of the content

data, and recording time information obtained during the compression of the content data.

14. The computer-readable recording medium
5 having a program embodied therein as claimed in claim 13,
wherein the compressed content data, the portion of the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

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15. The computer-readable recording medium having a program embodied therein as claimed in claim 13 or 14, wherein the portion of the content data is appended to another said portion of the content data,
15 which another said portion of the content data is recorded on said recording medium, as the compression of the content data progresses.

16. The computer-readable recording medium
20 having a program embodied therein as claimed in claim 13, 14, or 15, wherein the portion of the content data is recorded on a different recording medium than said recording medium.

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17. The computer-readable recording medium

having a program embodied therein as claimed in claim 16,
wherein the portion of the content data is recorded on a
different recording medium than said recording medium
during intervals between recording sessions of the
5 compressed content data.

18. The computer-readable recording medium
having a program embodied therein as claimed in claim 13,
14, 15, 16, or 17, wherein the program further causes a
10 computer to reproduce a portion of the content data,
which portion of the content data is recorded on said
recording medium; and to reproduce the content data at
fast speed, backward, or backward at fast speed based on
the reproduced portion of the content data.

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19. A recording apparatus, comprising:
a data recording unit configured to
intermittently record content data on a recording medium;
an index-information-and-portion-of-data
20 generating unit configured to generate index information
from the content data and to extract a portion of the
content data, which portion of the content data
corresponds to the index information, while the data
recording unit is recording the content data; and
25 an index-information-and-portion-of-data

recording unit configured to record on said recording medium, during intervals between recording sessions by the data recording unit of the content data, the index information and the portion of the content data
5 generated/extracted by the index-information-and-portion-of-data generating unit.

20. The recording apparatus as claimed in claim
19, wherein the data recording unit is configured to
10 temporarily store the content data to be recorded on said recording medium in a buffer; to read out the content data from the buffer; and to intermittently record the read-out content data on said recording medium.

15 21. The recording apparatus as claimed in claim
19 or 20, wherein

the index-information-and-portion-of-data generating unit is configured to generate index information from the content data, to extract a portion
20 of the content data, which portion of the content data corresponds to the index information, and to store the generated index information and the extracted portion of the content data in a buffer, while the data recording unit is recording the content data; and

25 the index-information-and-portion-of-data

recording unit is configured to read out the index information and the portion of the content data generated/extracted and stored in the buffer by the index-information-and-portion-of-data generating unit,
5 and to record on said recording medium the read-out index information and the read-out portion of the content data, during intervals between recording sessions by the data recording unit of the content data.

10 22. The recording apparatus as claimed in claim
19, 20, or 21, wherein the index information includes recording time information.

15 23. The recording apparatus as claimed in claim
19, 20, 21, or 22, wherein the index information includes frame number information.

20 24. The recording apparatus as claimed in claim
19, 20, 21, 22, or 23, wherein the index-information-and-
portion-of-data generating unit generates the index information and extracts the portion of the content data while the content data is being compressed.

25 25. The recording apparatus as claimed in claim
24, wherein the compressed content data, the portion of

the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

5 26. The recording apparatus as claimed in claim
24 or 25, wherein the portion of the content data is
appended to another said portion of the content data,
which another said portion of the content data is
recorded on said recording medium, as the compression of
10 the content data progresses.

15 27. The recording apparatus as claimed in claim
24, 25, or 26, wherein the portion of the content data is
recorded on a different recording medium than said
recording medium.

20 28. The recording apparatus as claimed in claim
27, wherein the portion of the content data is recorded
on a different recording medium than said recording
medium during intervals between recording sessions of the
compressed content data.

25 29. A recording method, comprising:
 a data recording step of intermittently
 recording content data on a recording medium;

an index-information-and-portion-of-data generating step of generating index information from the content data and extracting a portion of the content data, which portion of the content data corresponds to 5 the index information, while the content data are being recorded in the data recording step; and

an index-information-and-portion-of-data recording step of recording on said recording medium, during intervals between recording sessions of the 10 content data in the data recording step, the index information and the portion of the content data generated/extracted in the index-information-and-portion-of-data generating step.

15 30. The recording method as claimed in claim 29, wherein, in the data recording step, the content data to be recorded on said recording medium are temporarily stored in a buffer, read out from the buffer, and intermittently recorded on said recording medium.

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31. The recording method as claimed in claim 29 or 30, wherein

in the index-information-and-portion-of-data generating step, index information is generated from the 25 content data, a portion of the content data which portion

of the content data corresponds to the index information
is extracted from the content data, and the generated
index information and the extracted portion of the
content data are stored in a buffer, while the content
5 data are being recorded in the content data recording
step; and

in the index-information-and-portion-of-data
recording step, the index information and the portion of
the content data generated/extracted and stored in the
10 buffer in the index-information-and-portion-of-data
generating step are read out and recorded on said
recording medium during intervals between recording
sessions of the content data in the data recording step.

15 32. The recording method as claimed in claim
29, 30, or 31, wherein the index information includes
recording time information.

33. The recording apparatus as claimed in claim
20 29, 30, 31, or 32, wherein the index information includes
frame number information.

34. The recording method as claimed in claim
29, 30, 31, 32, or 33, wherein, in the index-information-
25 and-portion-of-data generating step, the index

information and the portion of the content data are generated while the content data are being compressed.

35. The recording method as claimed in claim
5 34, wherein the compressed content data, the portion of the content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

10 36. The recording method as claimed in claim 34 or 35, wherein the portion of the content data is appended to another said portion of the content data, which another said portion of the content data is recorded on said recording medium, as the compression of
15 the content data progresses.

37. The recording method as claimed in claim 34, 35, or 36, wherein the portion of the content data is recorded on a different recording medium than said
20 recording medium.

38. The recording method as claimed in claim 37, wherein the portion of the content data is recorded on a different recording medium than said recording
25 medium during intervals between recording sessions of the

compressed content data.

39. A computer-readable recording medium having
a program embodied therein, said program comprising:
5 a data recording code unit configured to
intermittently record content data on a recording medium;
 an index-information-and-portion-of-data
generating code unit configured to generate index
information from the content data and to extract a
10 portion of the content data, which portion of the content
data corresponds to the index information, while the data
recording code unit is recording the content data; and
 an index-information-and-portion-of-data
recording code unit configured to record on said
15 recording medium, during intervals between recording
sessions by the data recording code unit of the content
data, the index information and the portion of the
content data generated/extracted by the index-
information-and-portion-of-data generating code unit.

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40. The computer-readable recording medium
having a program embodied therein as claimed in claim 39,
wherein the data recording code unit is configured to
temporarily store the content data to be recorded on said
25 recording medium in a buffer; to read out the content

data from the buffer; and to intermittently record the read-out content data on said recording medium.

41. The computer-readable recording medium
5 having a program embodied therein as claimed in claim 39
or 40, wherein

the index-information-and-portion-of-data generating code unit is configured to generate index information from the content data, to extract a portion 10 of the content data, which portion of the content data corresponds to the index information, and to store the generated index information and the extracted portion of the content data in a buffer, while the data recording code unit is recording the content data; and

15 the index-information-and-portion-of-data recording code unit is configured to read out the index information and the portion of the content data generated/extracted and stored in the buffer by the index-information-and-portion-of-data generating code 20 unit, and to record on said recording medium the read-out index information and the read-out portion of the content data, during intervals between recording sessions by the data recording code unit of the content data.

25 42. The computer-readable recording medium

having a program embodied therein as claimed in claim 39, 40, or 41, wherein the index information includes recording time information.

5 43. The computer-readable recording medium having a program embodied therein as claimed in claim 39, 40, 41, or 42, wherein the index information includes frame number information.

10 44. The computer-readable recording medium having a program embodied therein as claimed in claim 39, 40, 41, 42, or 43, wherein the index-information-and-portion-of-data generating code unit generates the index information and extracts the portion of the content data 15 while the content data are being compressed.

45. The computer-readable recording medium having a program embodied therein as claimed in claim 44, wherein the compressed content data, the portion of the 20 content data, and the recording time information obtained during the compression of the content data are recorded in different areas of said recording medium.

25 46. The computer-readable recording medium having a program embodied therein as claimed in claim 44

or 45, wherein the portion of the content data is appended to another said portion of the content data, which another said portion of the content data is recorded on said recording medium, as the compression of
5 the content data progresses.

47. The computer-readable recording medium having a program embodied therein as claimed in claim 44, 45, or 46, wherein the portion of the content data is
10 recorded on a different recording medium than said recording medium.

48. The computer-readable recording medium having a program embodied therein as claimed in claim 47, 15 wherein the portion of the content data is recorded on a different recording medium than said recording medium during intervals between recording sessions of the compressed content data.